

## CLAIMS

1. A preformed porous ceramic carrier comprising an interconnected skeleton having pores the majority of which are in the range of from about 20 to about 1000 micron, the carrier having a density of less than about 40% theoretical, the pores containing a second material therein, the rate of release of the second material from the carrier being controlled.
2. A carrier according to Claim 1, wherein the skeleton is made up of scaffolding and struts.
3. A carrier according to Claim 1 or 2, wherein the skeleton has average pore sizes in the range of 20 to 800 micron.
4. A carrier according to Claim 3, wherein the average pore size is in the range of 60 to 800 micron.
5. A carrier according to Claim 4, wherein the micropores were formed by sintering the precursor of the carrier under conditions which were below those required for full sintering.
6. A carrier according to any preceding Claim formed of a skeleton is biocompatible material.
7. A carrier according to any preceding Claim, wherein the density ranges from about 10% to about 30% of theoretical density.

8. A carrier according to any preceding Claim, wherein the pores contain any one or more of:- growth factors; antibiotics; vitamins; proteins; hormones; a chemotherapy agent; or a radio opacifying agent, or the like.
9. A carrier according to Claim 8, wherein the pores containing any or more of the following growth factors:
  - a bone growth material
  - FGF (fibroblast growth factor)
  - IGF-1
  - IGF-II
  - PDGF (platelet derived growth factor)
  - TGF-B (transforming growth factor)
  - a bone forming or bone degrading cell.
  - BMP-Z
  - HGH
  - Concentrations of human derived growth factors
10. A carrier according to Claim 8, wherein the chemotherapy agent is cisplatin.
11. A carrier according to Claim 8, wherein the radio opacifying agent is strontium – 67 or samarium –153.
12. A carrier according to Claim 8, wherein the agent is MTX.

13. A carrier according to any preceding Claim, wherein the pores contain one or more of Werner-type co-ordination complexes; macrocyclic complexes; metallocenes and sandwich complexes and organometallic.
14. A carrier according to any preceding Claim, wherein the surface of the pores has been modified to control release of the second material.
15. A carrier according to any of Claims 1 to 14, wherein the surface of the pores has been modified by treatment with acid or alkali or plasma or chemical vapour deposition.
16. A carrier according to any of Claims 1 to 14, wherein the pores contain the second material in a degradable support, e.g. a biodegradable support.
17. A carrier according to Claim 16, wherein the biodegradable support is a collagen or polymer.
18. A carrier according to Claim 16 or 17, wherein the support is PCPP.SA, PCC, CPP.SA, FAD-SAPTMC, PAA and the like.
19. A carrier according to Claim 16 or 17 or 18, wherein the pores contain layers of second material or biodegradable support, each layer being different from its neighbour or neighbours.
20. A carrier according to Claim 16 or 17, or 18 or 19, wherein the pores contain material in layers, arranged as alternating layers of agent-free layer and of

agent containing layers or by the concentration of agent across different layers of collagen or polymer.

21. A carrier according to any preceding Claim, wherein the second material is held in the pores of the carrier by physical or chemical bonds or both.
22. A carrier according to any preceding Claim, wherein the second material is introduced into the pores by one or more of a centrifugation, immersion, vacuum impregnation or freeze drying technique.
23. A carrier according to any preceding Claim, wherein the exterior surface has been coated with a biodegradable polymer containing a drug.
24. A carrier according to any preceding Claim, wherein the skeleton is formed from a metal or non-metal oxide or the like.
25. A carrier according to Claim 24, wherein the ceramic is partially or fully resorbable.
26. A carrier according to Claim 25, wherein the skeleton is formed of calcium phosphate or HA.
27. A preformed porous ceramic carrier comprising an interconnected skeleton having pores the majority of which are in the range of from about 20 to about 1000 micron, the carrier having a density of less than about 40% theoretical, the pores containing MTX, the rate of release of the MTX being controlled.

28. A carrier according to Claim 27, wherein the MTX has been loaded into the pores by centrifugation and/or freeze drying.
29. A preformed porous ceramic carrier comprising an interconnected skeleton having pores the majority of which are in the range of from about 20 to about 1000 micron, the carrier having a density of less than about 40% theoretical, the pores containing  $\text{Fe(phen)3[ClO4]_2}$  the rate of release of the  $\text{Fe(phen)3[ClO4]_2}$  being controlled.
30. A carrier according to Claim 29, wherein the  $\text{Fe(phen)3[ClO4]_2}$  has been loaded into the pores by vacuum impregnation.
31. A preformed porous ceramic carrier comprising an interconnected skeleton having pores the majority of which are in the range of from about 20 to about 1000 micron, the carrier having a density of less than about 40% theoretical, the pores containing  $\text{Fe(phen)3[ClO4]_2}$  and a glycolide, the rate of release of  $\text{Fe(phen)3[ClO4]_2}$  being controlled.
32. A preformed porous ceramic carrier comprising an interconnected skeleton having pores the majority of which are in the range of from about 20 to about 1000 micron, the carrier having a density of less than about 40% theoretical, the pores containing Cisplatin, the rate of release of the Cisplatin being controlled.
33. A preformed porous ceramic carrier comprising an interconnected skeleton having pores the majority of which are in the range of from about 20 to about 1000 micron, the carrier having a density of less than about 40% theoretical, the

pores containing Cisplatin and a glycolide, the rate of release of the Cisplatin and a glycolide being controlled.

34. A preformed porous ceramic carrier comprising an interconnected skeleton having pores the majority of which are in the range of from about 20 to about 1000 micron, the carrier having a density of less than about 40% theoretical, the pores containing prednisolone, the rate of release of the prednisolone being controlled.
35. A carrier according to any preceding Claim, shaped for orthopaedic, maxillo-facial, or cranio-facial replacement or the like.
36. A carrier according to any of Claims 1 to 34, shaped for location at an intramuscular site, interperitoneal site, subcutaneous site, central nervous system or ocular sites.
37. A carrier according to any of Claims 1 to 7, 14 or 15, 20, 21 or 22, wherein the pores contain a general chemical or resin or petroleum derivative or explosives, or the like.